

comprises 90% or more of the total area of all peaks of a chromatogram, excluding the solvent peak, when analyzed on reverse phase-HPLC on a Vydac C₄ column having 5 μm particle size, 330 Å pore, 4.6 mm ID x 25 cm L in a solvent of 40 mM acetic acid in methanol/water (58/42; v/v) at a flow rate of 1 ml/minute, and wherein said saponin has immune adjuvant activity and is less toxic when used as an adjuvant than said *Quillaja saponaria* extract.

30. (Once amended) Substantially pure QA-7 saponin purified from a crude *Quillaja saponaria* extract [comprising] wherein said pure saponin is characterized by one predominant peak which comprises 90% or more of the total area of all peaks of a chromatogram, excluding the solvent peak, and having a retention time of approximately 9-10 minutes when analyzed on reverse phase-HPLC on a Vydac C₄ column having 5 μm particle size, 330 Å pore, 4.6 mm ID x 25 cm L in a solvent of 40 mM acetic acid in methanol/water (58/42; v/v) at a flow rate of 1 ml/minute.

33. (Once amended) Substantially pure QA-21 saponin purified from a crude *Quillaja saponaria* extract [comprising] wherein said pure saponin is characterized by one predominant peak which comprises 90% or more of the total area of all peaks of a chromatogram, excluding the solvent peak, and having a retention time of approximately 51 minutes when analyzed on reverse phase-HPLC on a Vydac C₄ column having 5 μm particle size, 330 Å pore, 4.6 mm ID x 25 cm L in a solvent of 40 mM

acetic acid in methanol/water (58/42; v/v) at a flow rate of 1 ml/minute.

37. (Once amended) A pharmaceutical composition useful for inducing the production of antibodies to an antigen in an individual comprising an immunogenically effective amount of an antigen and [a] at least one substantially pure saponin [purified from a crude *Quillaja saponaria* extract] as in any one of claims 29-35 and 40-45, wherein said [amount of said] substantially pure saponin is present in an amount sufficient to enhance the immune response of said individual to said antigen.

Please amend the following claims:

Claim 31, claim line 4, after "nm," please insert --has--.

Claim 32, claim line 2, after "comprising" please insert --the monosaccharides:--.

Claim 36, claim line 3, after "claims 29-35" please insert --and 40-45--.

Claim 38, claim line 2, please change "mammalian animal" to --mammal--.

Please cancel claim 39 without prejudice or disclaimer to the subject matter contained therein.

Please add the following new claims:

--40. A substantially pure QA-17 saponin purified from a crude *Quillaja saponaria* extract wherein said pure saponin is

characterized by one predominant peak which comprises 90% or more of the total area of all peaks of a chromatogram, excluding the solvent peak, and having a retention time of approximately 35 minutes on reverse phase-HPLC on a Vydac C₄ column having 5 µm particle size, 330 Å pore, 4.6 mm ID x 25 cm L in a solvent of 40 mM acetic acid in methanol/water (58/42; v/v) at a flow rate of 1 ml/minute.

41. The substantially QA-17 saponin of claim 40, wherein said saponin has immune adjuvant activity, and wherein said saponin is characterized by a carbohydrate content of about 29% per dry weight as assayed by anthrone, has a UV absorption maxima of 205-210 nm, has a micellar concentration of about 0.06% (w/v) in water and 0.03% (w/v) in phosphate-buffered saline, and causes hemolysis of sheep red blood cells at concentrations of 25 µg/ml.

42. The substantially pure QA-17 saponin of claim 41, wherein said carbohydrate content has a composition comprising the monosaccharides: terminal rhamnose, terminal xylose, 2-fucose, 3-xylose, 3,4-rhamnose, 2,3-glucuronic acid, terminal glucose, 2-arabinose, terminal galactose and apiose.

43. A substantially pure QA-18 saponin purified from a crude *Quillaja saponaria* extract wherein said pure saponin is characterized by one predominant peak which comprises 90% or more of the total area of all peaks of a chromatogram, excluding the solvent peak, and having a retention time of approximately 38 minutes on reverse phase-HPLC on a Vydac C₄ column having 5 µm